

CLAIMS

WHAT IS CLAIMED IS:

1. A method of providing one or more of sealing, baffling and structural reinforcement within a cavity of an article of manufacture, comprising:

- (a) providing a first member of the article;
- (b) providing a second member of the article;
- (c) providing a dynamic self-adjusting assembly including:
 - i) a carrier having a first member with a first surface and a second member with a first surface; and
 - ii) a first mass of expandable material adhered to the first surface of the first member;
- (d) positioning the self-adjusting assembly adjacent to the first member of the automotive vehicle;
- (e) assembling the second member of the automotive vehicle to the first member of the automotive vehicle for forming a cavity; and
- (f) activating the first mass of expandable material wherein, upon activation of the first mass of expandable material, the first mass of expandable material rotates relative to the second member of the assembly.

2. A method as in claim 1 wherein the first mass of expandable material is applied to the first member of the assembly with a mini-applicator.

3. A method as in claim 1 wherein activating the first mass of expandable material is accomplished by exposing the first mass to an elevated temperature in an e-coat or paint operation.

4. A method as in claim 1 wherein the second member of the assembly includes at least one fastening member for attaching the assembly to the first member of the article of manufacture.

5. A method as in claim 1 wherein the second member of the assembly is shaped to correspond to the first member of the article of manufacture and the first member of the assembly is shaped to correspond to the second member of the article of manufacture.

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6. A method as in claim 1 wherein the second member of the article of manufacture is moved laterally relative to the first member of the article of manufacture during assembly of the second member of the article of manufacture to the first member of the article of manufacture.

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7. A method as in claim 1 wherein the first mass of expandable material and the second mass of expandable material are substantially coplanar relative to each other after rotation of the first mass of expandable material.

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8. A method as in claim 1 wherein the first mass of expandable material is epoxy based and the first and second members of the assembly are formed of polymeric material.

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9. A method of providing baffling within a cavity of an automotive vehicle, comprising:

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- (a) providing a first member of the automotive vehicle;
- (b) providing a second member of the automotive vehicle;
- (c) providing a dynamic self-adjusting assembly including:
 - i) a carrier having a first member with a first surface and a second member with a first surface, said second member hingedly attached to the first member;
 - ii) a first mass of expandable material adhered to the first surface of the first member;
 - iii) a second mass of expandable material adhered to the first surface of the second member; and

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- iv) a connector member having a first end at least partially disposed within said first mass and a second end at least partially disposed within said second mass;
- (d) attaching the self-adjusting assembly to the first member of the automotive vehicle;
- 5 (e) assembling the second member of the automotive vehicle to the first member of the automotive vehicle for forming a cavity; and
- (f) activating at least one of the first mass of expandable material or the second mass of expandable material thereby at least partially releasing the connector member such that the first mass and first member of the assembly rotate relative to the second mass and second member of the assembly thereby allowing the first and second masses of expandable material more fully traverse a cross-sectional area of the cavity.
- 15 10. A method as in claim 9 wherein the first mass of expandable material is applied to the first member of the assembly with a mini-applicator.
- 11. A method as in claim 9 wherein activating the first mass of expandable material is accomplished by exposing the first mass to an elevated temperature in an e-coat or paint operation.
- 20 12. A method as in claim 9 wherein the second member of the assembly includes at least one fastening member for attaching the assembly to the first member of the automotive vehicle.
- 25 13. A method as in claim 9 wherein the second member of the assembly is shaped to correspond to the first member of the automotive vehicle and the first member of the assembly is shaped to correspond to the second member of the automotive vehicle.
- 30 14. A method as in claim 9 wherein the second member of the automotive vehicle is moved laterally relative to the first member of the

automotive vehicle during assembly of the second member of the automotive vehicle to the first member of the automotive vehicle.

15. A method as in claim 9 wherein the first mass of expandable material and the second mass of expandable material are substantially coplanar relative to each other after rotation of the first member of the assembly.

16. A method as in claim 1 wherein the first mass of expandable material is epoxy based and the first and second members of the assembly are formed of polymeric material.

17. A method of providing baffling within a cavity of an automotive vehicle, comprising:

- 15 (a) providing a first member of the automotive vehicle wherein the first member is at least part of a rear quarter inner panel;
- (b) providing a second member of the automotive vehicle wherein the second member is at least part of a rear body side outer panel;
- (c) providing a dynamic self-adjusting assembly including:
 - 20 i) a carrier having a first member with a wall and a first surface and a second member with a wall and a first surface, said second member hingedly attached to the first member with a fastener;
 - ii) a first mass of expandable material adhered to the first surface of the first member;
 - 25 iii) a second mass of expandable material adhered to the first surface of the second member; and
 - iv) a connector member having a first end at least partially disposed within said first mass and a second end at least partially disposed within said second mass for maintaining the wall of the first member cantilevered relative to the wall of the second member thereby preventing rotation about the fastener;

- (d) attaching the self-adjusting assembly to the first member of the automotive vehicle;
- (e) assembling the second member of the automotive vehicle to the first member of the automotive vehicle for forming a cavity; and
- 5 (f) exposing the first mass of expandable material to heat causing at least one of the first mass of expandable material or the second mass of expandable material to flow and expand such that the first mass of expandable material or the second mass of expandable material releases the connector member allowing the first mass and first member of the assembly to rotate relative to the second mass and second member of the assembly thereby allowing the first and second masses of expandable material to more fully traverse a cross-sectional area of the cavity.
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- 15 18. A method as in claim 17 wherein the first mass of expandable material is applied to the first member of the assembly with a mini-applicator.
- 19. A method as in claim 17 wherein activating the first mass of expandable material is accomplished by exposing the first mass to an elevated temperature in an e-coat or paint operation
- 20 20. A method as in claim 17 wherein the second member of the assembly includes at least one fastening member for attaching the assembly to the first member of the automotive vehicle.
- 25 21. A method as in claim 17 wherein the second member of the assembly is shaped to correspond to the first member of the automotive vehicle and the first member of the assembly is shaped to correspond to the second member of the automotive vehicle.
- 30 22. A method as in claim 17 wherein the second member of the automotive vehicle is moved laterally relative to the first member of the automotive vehicle during assembly of the second member of the automotive vehicle to the first member of the automotive vehicle.

23. A method as in claim 17 wherein the first mass of expandable material and the second mass of expandable material are substantially coplanar relative to each other after rotation of the first member of the assembly.